37. The method of Claim 36, wherein the human cell is an adult cell.

38. The method of Claim 36, wherein the human cell is selected from the group consisting of epithelial, neural epidermal, keratinocyte, hematopoietic, melanocyte, chondrocyte, B lymphocyte, T lymphocyte, erythrocyte, macrophage, monocyte, mononuclear, fibroblast, cardiac muscle, and non-cardiac muscle cell.

39. The method of Claim 36, wherein the human cell is an epithelial cell, lymphocyte or fibroblast.

40. The method of Claim 36, wherein the enucleated bovine oocyte is matured prior to enucleation.

41. The method of Claim 36, wherein step (ii) comprises inserting a human cell into the bovine oocyte, the method further comprising fusing the human cell and bovine oocyte

AJ Cont

42. The method of Claim 41, wherein fusion is effected by electrofusion.

43. The method of Claim 36, wherein the nuclear transfer unit is activated by exposure to ionomycin and dimethylaminopurine (DMAP).

44. The method of Claim 36, wherein the activated nuclear transfer unit is cultured to to obtain a multicellular nuclear transfer unit comprising about 50 cells.

45. The method of Claim 36, wherein step (v) comprises culturing cells comprising the inner portion of the nuclear transfer unit on a feeder layer.

46. The method of Claim 45, wherein the feeder layer comprises fibroblasts

47. The method of Claim 46, wherein the feeder layer comprises m use embryonic fibroblasts.

48. Isolated proliferating cells having human nuclear DNA and bovine-derived mitochondria obtained according to the method of Claim 36.

49. Isolated proliferating cells having human nuclear DNA and bovine-derived mitochondria obtained according to the method of Claim 39.

50. Isolated proliferating cells having human nuclear DNA and bovine-derived mitochondria obtained according to the method of Claim 46.

51. A method of producing embryo-derived, proliferating cells having human nuclear DNA and bovine-derived mitochondria, comprising the following steps:

(i) enucleating a bovine oocyte;

(ii) inserting a human epithelial cell or epithelial cell nucleus into the bovine oocyte under conditions suitable for the formation of a nuclear transfer unit;

(iii) activating the resultant nuclear transfer unit;

(iv) culturing the activated nuclear transfer unit to obtain a nuclear transfer unit having at least 16 cells; and

(v) culturing cells comprising the inner portion of the nuclear transfer unit of step (iv) in vitro on a feeder layer of mouse embryonic fibroblasts to obtain cells proliferating as a colony.

52. Isolated proliferating cells having human nuclear DNA and bovine-derived mitochondria obtained according to the method of Claim 51.

REMARKS

This amendment is responsive to the Office Action mailed on August 15, 2002. Claims 1-35 are canceled and new claims 36-52 are submitted. The amendment does not introduce new matter.

Support for the claimed method of producing isolated proliferating cells having human nuclear DNA and bovine-derived mitochondria is found in the specification, for example, on page 9, lines 18-30, and in Example 1. Support for the step of culturing the activated nuclear transfer unit to obtain a multicellular nuclear transfer unit comprising at